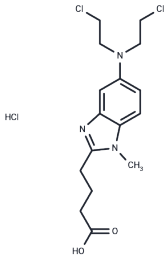
Data Sheet (Cat.No.T0095)

TargetMol

Bendamustine hydrochloride

Chemical Properties



CAS No. : 3543-75-7

Formula: C16H21Cl2N3O2·HCl

Molecular Weight: 394.72

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Bendamustine hydrochloride (EP-3101) (IC50 of 50 μM) is an alkylating agent associated with DNA damage.
Targets(IC50)	Apoptosis,DNA Alkylator/Crosslinker,DNA/RNA Synthesis
In vitro	Bendamustine causes more extensive and effective DNA single- and double-strand breaks than cyclophosphamide, Cisplatinum, or carmustine.Bendamustine inhibits mitotic assays and causes mitotic mega-mutations.Bendamustine regulates genes involved in apoptosis, DNA repair, and mitotic assays. Bendamustine had a very low teratogenic effect compared to an equimolar dose of Lomustine.26% of Bendamustine-treated MCF-7/ADR cells showed micronucleation compared to 6% of DMSO-treated cells. Bendamustine alone at concentrations ranging from 1 μg/mL to 50 μg/mL showed dose- and time-dependent effects with toxicity ranging from 30.4% to 94.8% observed after 48 hours. The LD50 of untreated and pretreated CLL cells was 7.3 or 4.4 μg/mL, respectively. Bendamustine treatment of SU-DHL-9 cells resulted in a 60% to 80% down-regulation of the mRNA expression of all three of these genes (polo-like kinase 1, Aurora kinase A, and cyclin B1). Bendamustine acts on non-Hodgkin's lymphocytes and uniquely regulates DNA repair pathways compared to other alkylating agents. Myeloid and breast cancer cells are resistant to Bendamustine, but HL-60 cells are moderately sensitive to Bendamustine.
In vivo	Bendamustine causes more extensive and effective DNA single- and double-strand breaks than cyclophosphamide, Cisplatinum, or carmustine.Bendamustine inhibits mitotic assays and causes mitotic mega-mutations.Bendamustine regulates genes involved in apoptosis, DNA repair, and mitotic assays. Bendamustine had a very low teratogenic effect compared to an equimolar dose of Lomustine.26% of Bendamustine-treated MCF-7/ADR cells showed micronucleation compared to 6% of DMSO-treated cells. Bendamustine alone at concentrations ranging from 1 μg/mL to 50 μg/mL showed dose- and time-dependent effects with toxicity ranging from 30.4% to 94.8% observed after 48 hours. The LD50 of untreated and pretreated CLL cells was 7.3 or 4.4 μg/mL, respectively. Bendamustine treatment of SU-DHL-9 cells resulted in a 60% to 80% down-regulation of the mRNA expression of all three of these genes (polo-like kinase 1, Aurora kinase A, and cyclin B1). Bendamustine acts on non-Hodgkin's lymphocytes and uniquely regulates DNA repair pathways compared to other alkylating agents. Myeloid and breast cancer cells are resistant to Bendamustine, but HL-60 cells are moderately sensitive to Bendamustine.

Cell Research	SU-DHL-1 and SU-DHL-9 cells are preincubated for 30 minutes with either 6 mM methoxyamine or 50 μM O6-benzylguanine, inhibitors of Ape-1 base excision repair enzyme, or alkylguanyl transferase enzyme, respectively. The cells are then exposed to various concentrations of Bendamustine for 72 hours. Cytotoxicity is evaluated by the MTT viability assay and an IC50 is determined as the drug concentration that inhibited by 50% the viability value of the untreated control. Analyses are done.(Only for Reference)

Solubility Information

Solubility	Ethanol: 14 mg/mL (35.47 mM),Sonication is recommended. H2O: 2 mg/mL (5.07 mM),Sonication is recommended. DMSO: 60 mg/mL (152.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.07 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5334 mL	12.6672 mL	25.3344 mL
5 mM	0.5067 mL	2.5334 mL	5.0669 mL
10 mM	0.2533 mL	1.2667 mL	2.5334 mL
50 mM	0.0507 mL	0.2533 mL	0.5067 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

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Chow KU, et al. Biochem Pharmacol. 2003, 66(5), 711-724.
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